1. An apparatus for promoting radial and axial expansion of soft tissue, the apparatus comprising:

a chamber having a wall defining an interior thereof and supporting an ambient pressure therein;

a vacuum source connected to the chamber to reduce the ambient pressure therein; and

a membrane sealingly connected to the chamber and characterized by a constant of elasticity selected to provide a bias resisting the reduction of ambient pressure against a soft tissue member in the membrane in order to reduce localized trauma to the soft tissue due to the reduction of ambient pressure.

2. The apparatus of claim 1wherein the membrane is substantially cylindrical in shape.

3. The apparatus of claim 2, wherein the membrane has a proximate end sealed against the wall of the chamber and a distal end open to the interior thereof.

4. The apparatus of claim 3, wherein the membrane is selected to promote more even distribution of axial and radial stress against soft tissue held therewithin.

5. The apparatus of claim 1, further comprising a bushing fitted to the chamber and sized to hold the membrane against the chamber in sealing relation thereto.

6. The apparatus of claim 5, wherein the bushing is positioned inside the chamber.

7. The apparatus of claim 5, wherein the bushing is positioned outside the chamber wall with respect to the interior of the chamber.

8. The apparatus of claim 5, wherein the bushing further comprises:

a cylindrical portion extending into the chamber

an afferent aperture portion extending between the wall of the chamber and the cylindrical portion to receive soft tissue thereinto; and

an afferent aperture portion open to the chamber to permit exit of the soft tissue thereinto under the influence of the reduced ambient pressure.

9. The apparatus of 5, wherein the bushing is made from a material selected from the group consisting of an elastomeric material, a plastic material, a polymer, a reinforced polymer, an expanded polymer, and a metal.

10. The apparatus of Claim 5, wherein the bushing further comprises a lip form to preclude insertion of the bushing completely into the chamber.

11. The apparatus of claim 10, wherein the lip is sized to form an abdominal seal and abdominal wall support for a user.

12. The apparatus of Claim 1, wherein the membrane has a first end and second end and further comprises:

a rolled flange proximate the first end;

a cylindrical portion defining an efferent aperture proximate the second end; and

a tapered portion defining an afferent aperture between the first and second ends.

13. A method for exercising a member formed of soft tissue, the method comprising:

providing a chamber having a wall of fixed dimension;

providing an evacuation device to reduce ambient pressure in the chamber;

providing a membrane, substantially tubular in shape, substantially elastic, having an interior passage, having a first end sealing securable to the wall of the chamber, and having a second end extendable into the chamber a length greater than the length of a member comprising soft tissue;

occluding the interior passage of the membrane by the member, in a flaccid state;

operating the evacuation device to reducing the ambient pressure in the chamber;

drawing the member into the interior passage by virtue of a pressure differential between bodily vascular pressure and the ambient pressure; and

expanding the member axially and radially due to the pressure differential.

14. The method of claim 13, further comprising maintaining the pressure differential at a value and for a time selected to promote vascular expansion and expansion of the member against a bias provided by the elasticity of the membrane.

15. The method of claim 13, further comprising opening the chamber to atmospheric pressure to release the pressure differential.

16. The method of claim 13, further comprising releasing the pressure differential to promote vascular contraction and flow of blood from the member back into the body.

17. The method of claim 16, further comprising alternatingly repeating both the operating the evacuation device and releasing the pressure differential a number of times selected to promote permanent vascular flexibility within the member in axial and radial directions.

18. The method of claim 16, further comprising alternatingly repeating the operating the evacuation device and releasing the pressure differential a number of times selected to promote permanent vascular expansion in the member .

19. The method of claim 16, further comprising alternatingly repeating operating the evacuation device and releasing the pressure differential, while radially modifying pressure on the member by the elastic bias of the membrane to minimize localized tissue damage thereto, a number of times selected to promote permanent expansion of the member.

20. The method of claim 19, further comprising applying a sealant between the membrane and the member to promote sealing therebetween and reduce friction to promote relative axial motion therebetween.

21. The method of claim 19, further comprising applying a sealing gel to the membrane for sealing the member and abdominal wall of a user there against to enhance the pressure differential applied thereto by the membrane.